

What is claimed is:

1. An optical fiber having a length of 1 km or more and an average transmission loss in a wavelength band of 1383 nm less than average transmission loss in a wavelength band of 1310 nm,

wherein the maximum value of any 1 km section loss in the 1383 nm does not exceed the average transmission loss by 0.03 dB/km or more.

2. The optical fiber according to claim 1, wherein the maximum value of any 1 km section loss in the wavelength band of 1383 nm does not exceed the average transmission loss by 0.01 dB/km or more.

3. The optical fiber according to claim 1, wherein a cutoff wavelength at a length of 22 m is less than 1380 nm.

4. The optical fiber according to claim 1, wherein the average transmission loss at the wavelength of 1383 nm is less than the transmission loss of wavelength 1310 nm after hydrogen ageing.

5. An optical fiber having an MFD of 8 μm or more at 1310 nm, no zero dispersion wavelength in a wavelength range of 1280 to 1324 nm, a dispersion absolute value in said wavelength range of 0.1 to 8.0 ps/nm/km a dispersion slope of 0.1 ps/nm²/km

or less, a cutoff wavelength of 1270 nm or less according to a 22 m method and an average transmission loss at a wavelength 1310 nm of 0.4 dB/km or less.

6. The optical fiber according to claim 5, wherein the MFD at 1310 nm is 9.5 μm or less.

7. The optical fiber according to claim 5, wherein a zero dispersion wavelength is 1325nm to 1350 nm.

8. The optical fiber according to claim 5, wherein when an MFD at 1310 nm is A (μm) and a cutoff wavelength according to a 2 m method is B (nm), $A \times B \leq 11 \times 1000$.

9. The optical fiber according to claim 5, wherein an average transmission loss at a wavelength of 1383 nm is less than an average transmission loss at the wavelength of 1310 nm.

10. The optical fiber according to claim 9, wherein an increase in transmission loss at wavelength 1383 nm from before to after a hydrogen ageing test is 0.04 dB/km or less.

11. A manufacturing method of an optical fiber having a mode field diameter of 8.0 to 11.0 μm at a wavelength of 1310 nm, an average transmission loss at a wavelength of 1383 nm less than an average transmission loss at a wavelength of 1310nm, and a dispersion of +2 to +8 ps/nm/km at a wavelength of 1383 nm, comprising the steps of

drawing the optical fiber from an optical fiber preform,
applying coating resins on said optical fiber, and

exposing said optical fiber to a deuterium containing
atmosphere

12. The manufacturing method of an optical fiber according
to claim 11, wherein the optical fiber has a dispersion of
+4 to +7 ps/nm/km at a wavelength of 1383 nm.

13. The manufacturing method of an optical fiber according
to claim 11, wherein said steps of exposing is performed at
an ordinary temperature and under an ordinary pressure.

14. The manufacturing method of an optical fiber according
to claim 13, wherein the processing time in said steps of
exposing is 24 hours at longest.

15. The manufacturing method of an optical fiber according
to claim 11, wherein said optical fiber has an amount of increase
in transmission loss of 0.04 dB/km or less at the wavelength
of 1383 nm when a hydrogen ageing test is conducted on said
optical fiber

16. The manufacturing method of an optical fiber according
to claim 11, wherein when a hydrogen ageing test is conducted
on said optical fiber, said optical fiber has an amount of

increase in average transmission loss of 0.01 dB/km or less at wavelength 1383 nm.

17. A manufacturing method of an optical fiber, including a deuterium processing on the optical fiber after drawing, characterized by a time point at which a difference between a difference of average transmission losses at the wavelengths of 1385 nm and 1420nm before deuterium processing and a difference of average transmission losses at the wavelengths of 1385 nm and 1420nm after deuterium processing is 0.01dB/km or more.

18. The manufacturing method of an optical fiber according to claim 17, wherein a time interval of 48 hours or more is provided for said optical fiber at 25°C from the time point at which said deuterium processing is started to the time point at which said transmission loss is measured.

19. The manufacturing method of an optical fiber according to claim 17, wherein the inspection length of the optical fiber is 10 km or more and a cutoff wavelength at a length of 22 m of 1300 nm or less.

20. A manufacturing method of an optical fiber, comprising the steps of

drawing the optical fiber from an optical fiber preform, winding said optical fiber around a bobbin, and then

immediately exposing said optical fiber to a deuterium containing atmosphere, wherein

said optical fiber is rewound around another bobbin while applying tensile tension before said deuterium is completely degassed from said optical fiber.

21. The manufacturing method of an optical fiber according to claim 20, wherein said tensile tension corresponds to 0.5% to 2% in tensile strain of the optical fiber.

22. The manufacturing method of an optical fiber according to claim 20, wherein said optical fiber is cut and divided into predetermined lengths in the longitudinal direction when said optical fiber is rewound.